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ABSTRACT

A study investigated differences in writing processes among second year (age 10) and fourth year (age 12) English school children using a modified protocol procedure thought to be less distracting to the writing process. Four children from each grade level wrote a descriptive paper, and their spontaneous comments during the writing period were tape recorded. Each utterance was then placed into one or more of 22 categories, and each paper was rated on a 5-point scale for content, organization, and surface elements. Results indicated that students from the two age levels wrote passages of roughly equal length and averaged the same number of comments (23). The most frequent comment category was "reviewing own experience," followed by "immediate planning." The children did not often engage in major revision of their writing; however, changes in the children's thinking process from age 10 to age 12 may play an "enabling" role in revision. Specifically, comments appeared in the 12-year-old student's protocols suggesting an awareness of paper characteristics or qualities, including effect on audience. The results suggest that protocol procedures are an effective tool for investigating children's writing, and that detailed scoring categories may make the technique effective for testing hypotheses as well as generating them. (HTH)

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A Categorical Analysis of Writing Protocols of English School Children

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headmaster of the Cedars Middle School, Newport Pagnell,
Buckinghamshire County, England for their cooperation in carrying out
this investigation.

In the past decade there has been an increasing interest in the
development of writing in children. Unfortunately most of our
knowledge of writing development has been retrospective (Graves, 1981)
and inferential. It is retrospective in that we have done interviews
with children and asked them to recall how they wrote. It is
inferential in that we have made extensive analyses of children's

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written products and attempted to infer from these analyses the changing processes of writing.

Recently researchers have increasingly attempted to investigate the process of writing directly. For example, Graves and his colleagues (Graves, 1982; Calkins, 1983) have made innovative use of longitudinal naturalistic observations in school settings. Other researchers, particularly those looking at adult writers, have used different direct procedures to tap writing processes. Matsuhashi (1982) and Schumacher et. al. (in press) have investigated the role of pauses in writing. Hayes and Flower (1983) have made effective use of protocol analysis to investigate writing processes.

Protocol analysis, however, has been used rarely in developmental studies of writing. This is unfortunate since the procedure could prove effective in generating and perhaps even testing hypotheses about developmental changes in writing. There are, however, some potential concerns which need to be considered in using this technique with children. First, since protocol generation is heavily verbal and necessitates concurrent production of verbal statements along with other activities, there is a heavy strain on working memory. Scardamalia (1981) has shown that memory limitations have a significant influence on writing.

Second, children may be more sensitive to the presence of other individuals while writing; hence the child's writing in a protocol situation may be modified because of added stress or to please the listener. The purpose of this study was to investigate differences in writing processes among English school children of different ages by using a modified protocol procedure. A more refined scoring procedure was employed to allow for a more detailed analysis of writing

characteristics.

Method

Subjects

Four second year (average age 10 years) and 4 fourth year (average age 12 years) English middle school children served as subjects. There were 2 males and 2 females at each age level; all the children were rated as high ability by the headmaster.

Stimulus Materials and Apparatus

The children were asked to write a descriptive paper on something from around where they lived, that they'd seen while traveling or that they had studied in school. A tape recorder recorded all comments made during the writing period.

Procedure

The children came individually to a small room, were told that the experimenter was trying to understand how people wrote, and that the paper they wrote would be handled as any other school paper. They were also told that in order to study the writing process they would be asked to say aloud everything they wrote, read, or thought as they were writing. They were then given a practice task in which they were prompted to talk aloud. Finally, they were given the writing assignment and the experimenter left the room. This latter step was taken to reduce stress and decrease the likelihood of attempts to please the experimenter. At least once during each writing session the experimenter reminded the writers to continue talking. There was no specified time period for the writing; most children completed

their papers in about 20 minutes.

Scoring

Process data. The protocols for each child were typed verbatim from the tapes. All passages which involved the children either saying what they were writing or reading were underlined. All remaining utterances were numbered and subjected to a categorical analysis. Two judges working independently categorized each of these utterances into one or more of 22 categories. These categories were adapted from the work of Schumacher et al (in press) and Graves (1981) and were pilot tested with other children. The categories were defined in detail for the judges and examples of utterances which fit the categories were presented. For example, the category "effect on reader" was defined as a "concern with how reader will react; will they believe my message; concern that the writing needs to be clearer so that self and others can understand." Two examples were "Will they understand what I've said? This should make people happy (sad, angry)." The 22 categories were effect on reader, reviewing own experience, reviewing own content, illustrations, support, reviewing the topic, motivation, global planning, immediate planning, transitions, reorganizing, process, sound, neatness, feeling, standard, length, spelling, word choice, punctuation and capitalization, sentence structure, and other mechanics.

After the initial scoring of the protocols by the judges, any disagreements were noted. These were discussed until perfect agreement was reached.

Product data. Each student's paper was rated independently by 2 judges on 5 point scales on each of 3 characteristics - content,

organization, and surface elements. The categories and scales were similar to those used by Schumacher et al (in press). After initial scoring, disagreements were noted and rescored. If there were still disagreements the judges discussed the ratings until agreement was reached.

Results

Product

Students from the two grade levels wrote passages of roughly equal length (2nd year - 230 words; 4th year - 240 words). On each product measure the older children were rated higher than the younger ones although an analysis of variance did not find a significant grade effect. The means for 2nd and 4th year students on the content measure were 3.0 and 3.5 out of 5, respectively; on organization they were 2.25 and 3.0, respectively, and on surface elements they were 2.25 and 3.5, respectively.

Process

The average number of comments scored was identical for the 2nd and 4th year students - 23 each (range 9-38). There were, however, more categorizations made by the judges on the 2nd year than on the 4th year comments. The most frequently found category was "reviewing own experience" (2nd year - 35; 4th year - 27). Some typical examples were: "Oh no, I can't remember what the outside of the church looks like." "Now I suppose I had better put about my, ... where I keep him."

The second most frequent category was "immediate planning" (2nd - 26; 4th - 13). Typical comments were "Tell me how I'd end that." and "What else can I write."

The third most frequent category was "word choice" (2nd - 18; 4th - 14). Typical comments were "uh... encircled, no not encircled... and ... bordered." and "called, was called, um."

The fourth most frequent category was "reviewing content" (2nd - 9; 4th - 6). One example is "Well now, what could I put? I've written all about his ... what he looks like, what, what his color is, what he's like, sort of, and um how old he is..."

These 4 categories accounted for 69% of all the utterances - 76% of 2nd year and 60% of 4th year. Three other categories showed somewhat greater use among 2nd year than 4th year students: "length," "spelling," and "reviewing the topic."

Some categories showed an increase in usage from the 2nd year to the 4th year. These were 1) "effect on reader" (2nd - 1; 4th - 6) with a typical comment, "um, I've got them muddled up so I have to go back now, back to where we was going inside the church;" 2) "process" (2nd - 3; 4th - 5) with a typical comment, "read through it before I finish;" 3) "standard" (2nd - 0; 4th - 4) with a typical comment, "Crumbs, usually when I'm doing stories I wonder what grade my teacher is going to give, and how she's going to mark it." Other categories showing somewhat higher usage in 4th year students were "feeling," "sound," "punctuation and capitalization," and "sentence structure."

Finally, a number of categories were rarely used by any students. For example, 7 categories were used only once or not at all. These included "illustrations," "support," "motivation," "global planning," "transitions," "reorganizing," and "other mechanics." The category "neatness" was used twice by both 2nd and 4th year students.

Discussion

The results of this study indicate that most comments made during writing by 10-12 year old children deal with the immediate activities of thinking of what they know, planning their next immediate writing, choosing specific words or reviewing what they've already written. Although there does appear to be a substantial drop from age 10 to age 12 in these utterances indicating a developmental relationship nevertheless over half of the utterances produced by 12 year old students still dealt with these categories. There is little evidence of rhetorical planning or a problem solving orientation to writing as indicated by the infrequent use of categories such as global planning and effect on reader. It is possible that this is a function of the writing assignment or the writing setting.

The pattern of category use noted here concurs with the argument put forward by Scardamalia and Bereiter (1982) that young writers use an information-relating or knowledge-telling strategy. The four categories found to be used frequently in this study involve thinking about what one knows and then writing it down with little overall planning of the passage.

As other researchers have found, children of these ages do not often engage in major revisions of their writing. Most changes in the texts here involved punctuation and word changes. However, there are changes in the child's thinking processes between ages 10 and 12 which may play an "enabling" role in revision. Specifically there are comments appearing in the 12 year old student protocols suggesting an awareness of characteristics or qualities of the papers. For example, consider the comments by these older students in the following categories:

effect on reader - "Um I've got them muddled up, so I have to go back now...!"

sound - "sounds better now."

process - "read through it before I finish."

feeling - "God, this is awful."

standard - "Um this isn't going to be a very good piece."

The number of utterances in these 5 categories rose from 5 in the 10 year olds to 18 in the 12 year olds. These changes indicate a growing awareness of potential problems in the text. Such an awareness is a necessary precursor to revision.

Finally, the results of this study suggest that protocol procedures are an effective tool in investigating children's writing. By using detailed scoring categories the technique may even prove effective in testing hypotheses as well as in generating them.

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